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FACTORS LEADING TO CURRICULAR CHANGE.

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CHANGES IN INSTRUCTIONAL PRACTICES AND REASONS THEREFOR WERE TABULATED FROM QUESTIONNAIRE RESPONSES RECEIVED FROM 319 OF 650 NEW ENGLAND ELEMENTARY AND SECONDARY SCHOOL TEACHERS. AMONG 458 MENTIONS OF METHODS CHANGES, THE MAJOR ONES WERE USE OF INDEPENDENT STUDY AND RESEARCH (22 PERCENT), USE OF AUDIOVISUAL AIDS (14 PERCENT), AND NEW METHODS OF TEACHING READING (12 PERCENT). AMONG 9 TYPES OF CONTENT CHANGES, THE MAJOR ONES WERE MODERN MATH (40 PERCENT), REORGANIZATION OF EXISTING CONTENT (21 PERCENT), INCREASE IN SCIENCE CONTENT (11 PERCENT), AND ACCELERATION OF CONTENT (9 PERCENT). AMONG 15 REASONS FOR CHANGE THE MAJOR ONES WERE TO IMPROVE MOTIVATION (13 PERCENT), TO MEET ADMINISTRATIVE REQUIREMENTS (11 PERCENT), TO BETTER ACCOUNT FOR INDIVIDUAL DIFFERENCES (11 PERCENT), AND TO INCREASE STUDENT ACHIEVEMENT (10 PERCENT). AMONG SIX CRITERIA FOR EVALUATING OUTCOMES FROM CHANGES, THE MAJOR ONES WERE STUDENT ACHIEVEMENT ON TEACHER MADE TESTS (26 PERCENT), STUDENT PERFORMANCE ON STANDARDIZED TESTS (21 PERCENT), AND TEACHER JUDGMENTS OF PUPILS (19 PERCENT). CHANGES CONSISTED MAINLY OF REVISION OF EXISTING CONTENT. MANY WERE JUDGED TO HAVE BEEN MADE ON A PIECEMEAL BASIS AND IN RESPONSE TO PRESSURES RATHER THAN AS A RESULT OF "TEACHER SELF-RENEWAL" OR OF EVALUATION OF EXISTING PRACTICES AND CONSIDERED EXAMINATION OF INSTRUCTIONAL GOALS. (RF)

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FACTORS LEADING TO CURRICULAR CHANGE

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Instructional practices, the ways a teacher functions in working with learners, represent the pivotal points of teaching. These practices are guided by individual philosophies, a knowledge of subject matter and an understanding of learning principles, and the other forces operating in the school and in the community which determine how knowledge is transmitted. In actuality, the teacher is confronted with a triangular relationship which exists among the learner, the teaching method, and subject matter. An understanding of this relationship normally leads to changes in practice which grow out of and conform to newly acquired insights.

Changes in curriculum involve adjustments in content such as the reorganization, extension, or broadening of content materials, and changes in teaching methods, through new or refinements of existing procedures. The change or innovation may be a result of the individual teacher's initiative based upon experience, formal study, group work through inservice programs, administrative suggestion, or any combination of these factors. The changes may grow out of ill-conceived spasm reactions at one extreme or well-designed theoretical models at the other. But, regardless of its nature, a knowledge of the types of changes

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This study was an outgrowth of a report of the New England Association for Supervision and Curriculum Development (NEASCD) Policies Commission headed by Dr. Philo Pritzkau establishing the need for change and a theoretical framework to guide effective curriculum development. The Executive Board of NEASCD appointed the following committee charged with the responsibility of conducting a study on curricular changes in New England: Maureen Lapan, Connecticut; Beatrice Cobb, Maine; George C. Thawley, Massachusetts; John Economopoulos, New Hampshire; Roberta Kellogg, Rhode Island; Hazel Devereaux, Vermont; and Thomas E. Moriarty, Chairman.

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actually being made in teaching practices and the reasons behind these changes should provide insight into innovation in the classroom. The limited data available on how teachers bring about reform suggest an area for needed research.

The purpose of this pilot study in the New England region was three-fold: (1) to determine the nature of changes teachers make in their practices; (2) to identify the reasons behind implementing change; and (3) to obtain data which might provide insight into the types of professional activities which would be most fruitful in terms of curriculum improvement and educational reform. In addition, it was believed by the Executive Committee of NEASCD that this study would serve as a logical supplement for the work of the Pritzkau Commission which recommended the establishment of learning centers where teachers could "learn together as they delved into the structure of knowledge and its meanings."[1]

In the study it was assumed that the school represents an institution where someone teaches something to someone else with a method, and that changes in classrooms are determined by the nature of alterations that teachers make in instructional procedures and subject matter in relation to the learner. In order to give meaning to words "method" and "content", the following operational definitions were employed:

> METHOD is defined as a composite or combination of means whereby a learning situation is initiated or sustained -- such as formal lectures, informal homework, committee or group work, student related activities, etc.
>
> CONTENT is defined as a body of organized subject matter consisting of basic skills of learning, information about the past or present, attitudes toward such information, or the creative extension of it -- such as new principles of mathematics, science, history or English.

The study was conducted by distributing a questionnaire to approximately 650 teachers with a proportional representation from each of the New England

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[1]NEASCD Policies Commission Report, NEASCD Newsletter, 7:1, Number 2, June 1964.

states. The sample was selected in each state by the member of the NEASCD Executive Council serving on the Research Committee and representing Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. The sample represented an equal distribution of elementary and secondary teachers with all subject matter areas being represented at the secondary level. A total of 319 teachers responded to the questionnaire and provided a total of 800 individual cases for study and analysis.

Each teacher participating in the study was requested to provide information relative to changes in classroom practice dealing with content or method during the past two years. Each respondent was requested to report from one to three cases. Information requested called for answers to the following: (1) In what areas have changes been made in your classroom -- method or content?; (2) What changes did you introduce into your classroom within the last two years?; (3) What considerations led to your decision to introduce such a change into your classroom?; (4) What was the key factor that effected your decision?; (5) Was the new practice evaluated? If yes, what factors were taken into consideration in evaluating outcomes?; (6) How was the evaluation conducted?; (7) Has the change been continued? Indicate the reasons for action. The results are provided below in tabular form.

In the total of 800 cases where instructional patterns were changed in the classroom, 458 were identified to be in the area of method while 342 cases dealt with changes in content. It should be noted that the attempt to differentiate between method and content was difficult. As reflected in Table I, the major changes in methodology were the introduction of independent study and research (22%), the utilization of audio visual technology (14%), and the reorganization of procedures employed in the teaching of reading (12%).

TABLE I
NATURE OF CHANGE IN METHOD AS REPORTED
BY SELECTED CLASSROOM TEACHERS (N of 458)

Nature of Change	Number of Responses	Per Cent of Responses
Use of Independent Study and Research	103	22
Use of Audio Visual Technology	64	14
Changes in Teaching of Reading Methods	54	12
Multiple Grouping of Pupils	36	8
Increased Student Participation	35	8
Increased Use of Written Compositions	34	7
Assist Pupils in Self Understanding	30	7
Initiated Group Work Type Activity	26	6
Participated in Team Teaching	12	3
Assigned More Oral Work in Class	11	2
Improved Evaluation Techniques	6	1
Miscellaneous	47	10

In terms of change related to content, the changes varied from strengthening existing subjects to the introduction of new areas of learning. These changes are reported in Table II. The major area of subject matter change was in the area of mathematics, where 40 per cent of the teachers reporting noted modern math. This percentage is influenced by the elementary teachers in the sample. A reorganization of existing content was noted by 21% of the respondents. Other basic subjects to receive attention were science in 11 per cent of the cases and modern languages in 5 per cent.

TABLE II
NATURE OF CHANGE IN CONTENT AS REPORTED BY SELECTED
CLASSROOM TEACHERS (N of 342)

Nature of Change	Number of Responses	Per Cent of Responses
Introduced Modern Math Concepts	138	40
Reorganization of Content of Existing Courses	74	21
Increased Curricular Content in Science	39	11
Acceleration of Curricular Content	32	9
Foreign Language	17	5
Linguistics Integrated with Language Arts	15	5
Used Poetry and Literature to Encourage Creativity	20	6
Industrial Arts	5	2
Integrated Art into the Curriculum	2	1

Even though the major revolution in education appears to be a movement toward a discipline-centered curriculum and away from being child-centered or society-centered in the traditional sense, Table III suggests that teachers included in this study introduced changes based upon motivating the student body to take a more active interest in existing programs. The discipline-centered curriculum implies the effective development of the various subject fields by focusing upon fundamental ideas and relationships, using the different methods of inquiry for each discipline, and exploring knowledge in terms of its structure, concepts, and interrelationships.

The major factors reported dealt with meeting individual differences (13%) and lack of motivation on the part of the learner (12%). Factors which may be interpreted as changes growing out of a desire to introduce the discipline-centered approach such as curricular breadth, functional knowledge, and evaluation techniques represented only 17% of the considerations leading to a decision for change.

TABLE III
CONSIDERATIONS LEADING TO A DECISION TO INTRODUCE
A CHANGE IN CLASSROOM PRACTICE (N = 800)

Factors in Decision Making	Number of Responses	Per Cent of Responses
Failing to Meet Individual Differences	103	13
Lack of Pupil Motivation	93	12
Need to Cover More Content	67	8
Low Achievement of Pupils	66	8
Lack of Student Participation in Class	65	8
Availability of New Materials	60	8
Recommended by Administrative Staff	57	7
Personal Dissatisfaction with Existing Curriculum	53	7
Desire to Relate School to Child's Life	50	6
Need to Improve Evaluation Techniques	44	6
Provide Greater Curriculum Breadth	37	5
Lack of Understanding of Content Covered	36	4
Findings of Research Studies	35	4
Concern for Limited Pupil Backgrounds	20	2
Desire to Develop Experimental or Pilot Programs	14	2

In reporting the key factor in effecting a decision to change was the desire to increase motivation and to meet individual needs. Table IV indicates that these two areas represent 24% of the reasons. Other major factors identified were administrative decision (11%) and poor achievement on the part of youngsters in existing programs (10%). It is interesting to note that formal coursework completed and institutes attended were mentioned in only 10% of the cases.

TABLE IV
KEY FACTOR EFFECTING DECISION TO CHANGE (N = 800)

Key Factor in Decision to Change	Number of Responses	Per Cent of Responses
Desire to Increase Motivation	104	13
Responding to Administrative Decision	89	11
To Meet Individual Differences	88	11
Lack of Achievement in Current Program	82	10
Ideas from an Inservice Course	64	8
Provide for a Realistic Curriculum	57	7
To Achieve More Pupil Involvement	49	6
Search for Self Renewal	38	5
To Aid Pupil Understanding	38	5
Modern Trends from Professional Reading	30	4
Group Decision of Staff	28	3
To Provide Greater Variety of Experience	27	3
Availability of New Materials and Equipment	26	3
To Improve Procedures for Evaluation	25	3
Findings of Research Studies	21	3
Parental Pressures for Change	15	2
Outcome of Institutes (NDEA & NSF)	14	2
To Achieve More Efficiency in Teaching	5	1

A variety of approaches were employed in evaluating the outcome of changes in either methodology or content as indicated in Table V. The achievement of the pupils and their performance on tests constituted 26% of the factors in terms of evaluating outcomes. It is interesting to note that when outcomes were evaluated, pupil motivation (9%) and involvement (8%) were given limited attention.

TABLE V
FACTORS CONSIDERED IN EVALUATING OUTCOMES OF CHANGE

Evaluation Factors	Number of Responses	Per Cent of Responses
Pupil Achievement as Measured by Teacher-made Instruments	209	26
Performance on Standardized Tests	180	21
Teacher Judgment of Pupil Behavior	147	19
Motivation or Interest of the Pupil in the Subject	73	9
Student Involvement in Evaluating His Progress	61	8
Improved Understanding by Pupils of Material Presented	61	8
None Identified	69	9

As indicated in Table VI, some form of evaluation was undertaken in 71% of the cases. In 56% of the cases, the evaluation was conducted either by the teacher or the teacher in cooperation with the administrative staff. It should be pointed out however that practices were evaluated by the administrative staff (15%) or no one (29%) in 44% of the cases reported. There was no evidence that evaluation was pre-planned in accordance with any defined criteria or design.

TABLE VI
INDIVIDUALS RESPONSIBLE FOR EVALUATION OF CHANGE

Responsibility for Evaluation	Number of Responses	Per Cent of Responses
Classroom Teacher	221	28
Administrative Staff	124	15
Classroom Teacher and Administrative Staff	220	28
No One Identified as Having a Responsibility	235	29

Table VII indicates that 60% of the teachers reported that the changes introduced into the classroom were continued while in 14% of the cases the practice was discontinued. In 26% of the cases, no response was given, leaving the judgment to the intuition of the reader.

TABLE VII
PRACTICE CONTINUED FOLLOWING INTRODUCTION OF CHANGE

Response	Number Responses	Per Cent of Responses
Yes	490	60
No	109	14
No Reply	201	26

In summarizing the data, it is apparent that the teachers in this pilot study are involved in implementing a number of changes in their instructional procedures. In the majority of these cases, the changes grow out of the teacher's desire to motivate the learner and to meet individual differences. Although administrative decision is an important factor in introducing change, the key factors for introducing change were rooted in the concerns of the teacher. In most cases, some evaluation was made, but there was no evidence to indicate that evaluations were pre-planned or based upon any formal type of research design.

In most cases the practices were continued, but the reasons for continuation were not clear. The data suggested that the teacher altered instructional procedures in accordance with what he could do in his own classroom without interfering with the work of other teachers, or relocated content in such a way so as not to interfere with the agreed-upon scope and sequence of content assigned to various grade levels or courses.

In Conclusion

Innovation and change are characteristic of this period in history. It is generally agreed that as a nation we are in a period of educational reform that is resulting in major changes at all educational levels. Obviously the teachers involved in this survey were engaged in this process at the local level. Although it would be foolhardy to draw major conclusions from the findings of a pilot study dealing with a very limited sample of teachers, there are some general comments which appear to be worthy of enumeration.

1. There were no cases reported indicating that innovation or reform was an outgrowth of an evaluation or development of instructional goals for the school.

2. The evidence suggest that change takes place on a piecemeal basis rather than as a result of any overall reorganization of subject matter areas

or a study of their structure and meaning with the exception of mathematics. For the most part, the change which does take place is a result of administrative decision or that of the individual teacher, rarely a genuine group decision.

3. There is more relocation of existing content than the addition of new material. Therefore, change which takes place is a result of modifying traditional subject matter areas rather than introducing new areas or materials.

4. Teachers desire to change classroom practices in order to motivate students as well as achieve excellence, efficiency, and flexibility.

5. Even though the majority of reported innovations were not evaluated, the basis for evaluation was increased to include measures other than standardized tests, such as observation, pupil self-evaluation, and student performance in task-oriented activities.

6. Even though the current reform in education seems to be discipline-centered, the respondents in this study were either child-centered or subject-centered in the traditional sense, where performance was the acquisition of factual material rather than the understanding of structure and meaning.

7. Although many changes in practice were reported, to describe these changes as revolutionary would be an overstatement of the case.

Whether current reform is closing the gap between theory and practice is open to question. Changes appear to be piecemeal and a reaction to pressures rather than the result of teacher self-renewal -- the self-renewal essential to vitality in keeping the curriculum current, dynamic, and alive. Without a built-in type of self-renewal on the part of teachers and the school system itself, any type of curriculum change is rapidly out-of-date. Teachers must first learn the process of analysis, evaluation, and change as a basis for curriculum reform. This would involve an understanding of the basic steps in changing behavior, such as observing existing behavior, analysis of this behavior, experimentation with new behavioral roles, and observation and evaluation of the newly

formed patterns.

The task of developing and evaluating new curricular designs and changes seem to be too great for the individual local school systems, and as a result should be the responsibility of broadly based curriculum centers. This conclusion gives support to Pritzkau's suggestion that teachers and college professors gather several times a year at established centers to "learn together" and to consider the various aspects of the structure of knowledge in various content areas.

A curriculum development and research center could focus upon the educational needs of a state or a region. It could capitalize on the intelligent utilization of existing personnel. It could take the necessary steps to implement exemplary programs in either individual classrooms, school systems, or the geographic area encompassed by the center. Time and resources could be devoted to the study of existing structures, to the identification of priority areas, and to the design of educational programs. Innovation would be a direct outgrowth of available research evidence or tested practices growing out of center activity.

It is obvious that the individual resources of a single community cannot afford full-scale innovation and research at all levels or within all fields of study assigned to the public schools. The necessity for more effective use of resources, educational resources, in a region is apparent. The ultimate responsibility rests with the leadership in school systems, in state departments, and in higher education to plan new structures and organizations to meet the needs of educational reform. The other alternative to self-renewal of the "establishment" is the continuation of educational lags and the general dissatisfaction growing out of frustrated attempts to improve.

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